

REMARKS

Claims 1-5 are pending. Claims 6-14 have been cancelled.

Drawings

The indication that the drawings filed on September 17, 2003, were accepted is noted. Further, the indication that the corrected drawings filed on June 21, 2005, were acknowledged and accepted is noted.

Foreign Priority

The indication that the foreign priority documents have been received is noted.

Information Disclosure Statement

An Information Disclosure Statement is being filed on December 7, 2005, concurrent with the filing of an RCE.

Restriction Requirement

Restricted claims 6-14 have been cancelled.

Reply to Rejections

Claims 1 and 3-5 are rejected under 35 U.S.C. § 102(b) as being anticipated by Kazuya et al. (JP 11-142841), hereinafter "Kazuya." This rejection is traversed.

Base claims 1 and 5 have been amended. Support for these amendments are found, e.g., on page 11, lines 7-11.

Note, for the convenience of the Examiner a mechanical translation of the reference which has just become available is submitted.

The Office Action indicates that since the claim limitation "capable of transmitting light" in the pending claims has no patentable weight, amendment of the claims to positively claim such a limitation has been made.

Moreover, the reference Kazuya does not teach or suggest that light from the light source is transmitted through the conductive film 1, which the Office Action asserts corresponds to the light amount reducing member of the present invention.

In fact, as argued in our response to the previous Office Action (the Office Action dated March 22, 2005), the conductive film (1) is covered by the reflection sheet (3), and therefore it is not clear how “the light is transmitted through the film and is reflected by the reflection sheet, 3,” as the reflection sheet (3) is already directly in the light path of the lamp (4). This is clearly shown in the enlarged view of figure 1 of Kazuya, provided below.

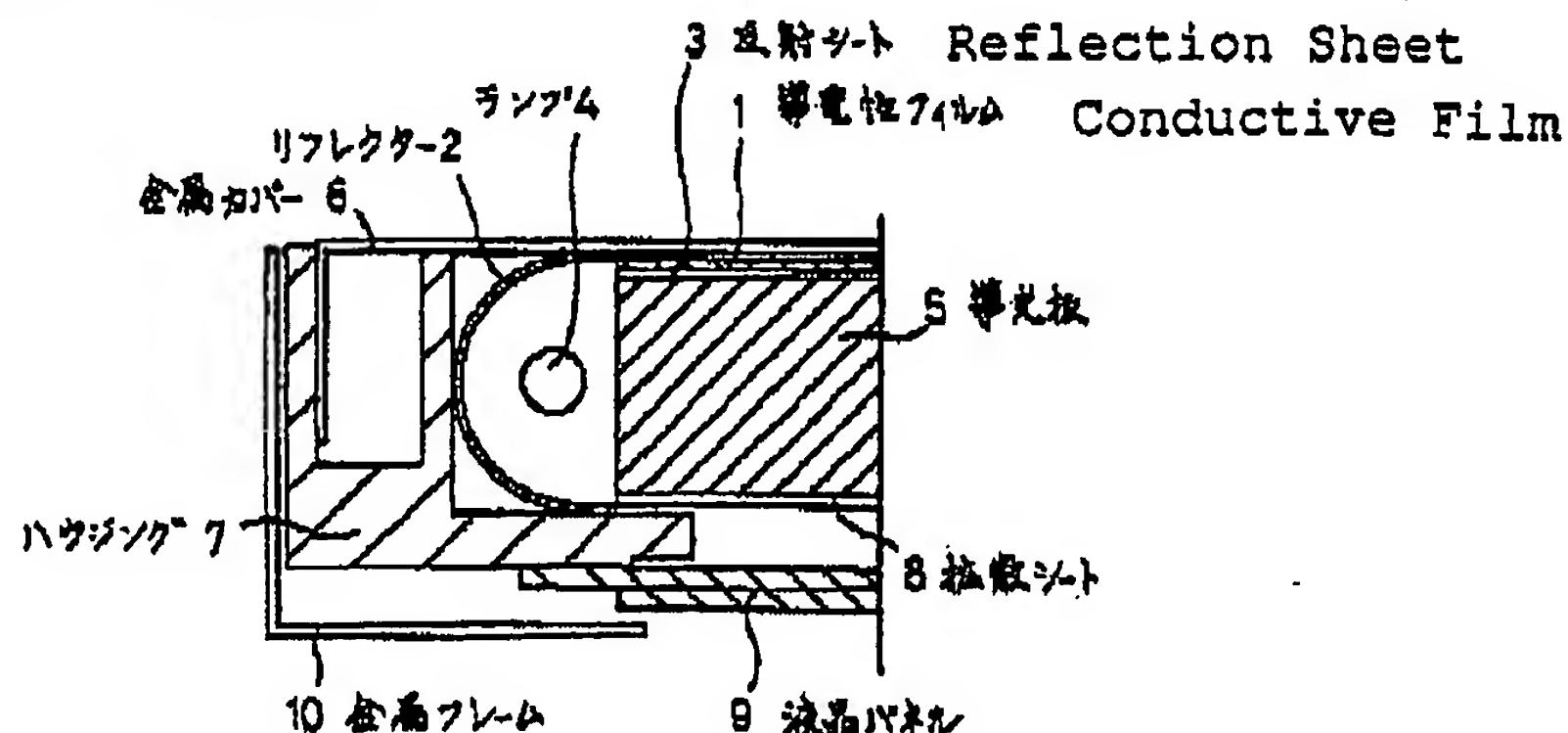
In fact, as disclosed in the present application, the reference Kazuya discloses a method of reducing the adverse influence of electromagnetic noise generated by a fluorescent lamp on a liquid crystal panel by providing a reflection sheet comprising a conductive film, a metal lamp reflector, or the like (please see, e.g., page 7, line 18 to page 8, line 4).

The reference Kazuya neither teaches nor suggests that the conductive film 1, asserted by the Office Action to correspond to the light amount reducing member of the present invention, is capable of transmitting light. Moreover, Kazuya neither teaches nor suggests that said conductive film 1 is made of a material having a greater attenuation coefficient than that of the light guide plate.

Kazuya only discloses that the “conductive film 1 is inserted between a reflector 2 and the reflective sheet 3, further, it connects with the metal covering 6 grounded electrically” (please see, e.g., the machine translation of paragraph [0010] of the reference Kazuya).

Therefore, since Kazuya neither teaches nor suggests that a light amount reducing member for reducing the amount of light transmitted therethrough from the light source and made of a material having a greater attenuation coefficient than that of the light guide plate, the rejections should be withdrawn.

Figure 1 of Kazuya



With respect to dependent claims 3 and 4, these claims are considered patentable at least for the same reasons as the base claim.

With respect to independent claim 5, the same comments with respect to claim 1 also apply here.

For the reasons set forth above, the Examiner is requested to reconsider and withdraw the rejection of the claims under 35 U.S.C. § 102

Allowable Subject Matter

Claim 2 was considered allowable if rewritten in independent form, including all the limitations of the base claim. As noted above, claim 1 is considered patentable, and accordingly, claim 2 remains in its dependent form.

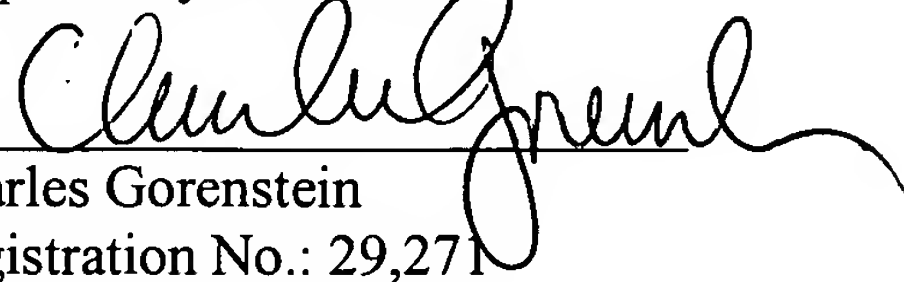
Conclusion

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact the undersigned at the telephone number below, to conduct an interview in an effort to expedite prosecution in connection with the present application.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§1.16 or 1.17; particularly, extension of time fees.

Dated: December 7, 2005

Respectfully submitted,

By 
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CLAIMS

[Claim(s)]

[Claim 1] A liquid crystal panel and the light guide plate which performed optical predetermined regular-ization arranged on said liquid crystal panel, The reflective sheet stuck on said light guide plate, and the lamp arranged at the lateral portion of at least one side of said light guide plate, The liquid crystal display which is a liquid crystal display including metal covering holding a reflector, a light guide plate, etc. which wrap in said lamp, and is characterized by making the conductive film electrically connected to said metal covering intervene between said reflectors and reflective sheets.

[Translation done.]

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DETAILED DESCRIPTION

[Detailed Description of the Invention]

[0001]

[Field of the Invention] This invention relates to the liquid crystal display used for displays, such as a liquid crystal television and a personal computer.

[0002]

[Description of the Prior Art] In recent years, in the display for information machines and equipment, such as a laptop type and notebook type word processor or a personal computer, many liquid crystal displays came to be used from the descriptions, such as a light weight, a thin shape, and a low power.

[0003] Moreover, although the liquid crystal display having a lighting unit occupies most, roughly divides this lighting unit and is classified into the directly under type using optical regular-ized means, such as a lighting curtain, and the edge light type using a light guide plate with an improvement and colorization of the brightness of a liquid crystal display screen as a recent trend, in connection with thin-shape-izing or lightweight-izing of a notebook type word processor or a personal computer, an edge light type is in use recently.

[0004] The conventional liquid crystal display is explained referring to a drawing below. Drawing 2 is the sectional view showing the configuration of the important section in the conventional liquid crystal display, and uses an edge light type lighting unit. In the lighting unit of the edge light type shown in drawing In order to use luminescence from the lamps 4, such as a fluorescent lamp, effectively, the reflective sheet 3 is installed in the rear face of the light guide plate 5 which performed optical regular-ization. The configuration which wraps the lamp 4 arranged on the side face of a light guide plate 5 in the sheet-like reflector 2 is taken. Paste up a reflector 2 on the diffusion sheet 8 or a light guide plate 5 by the double faced adhesive tape (illustration abbreviation) at the front-face side of a light guide plate 5, and in the rear-face side of a light guide plate 5, on the reflective sheet 3, in piles, while fixing with the metal covering 6, a reflector 2 To the front-face side of a light guide plate 5, it covers with the diffusion sheet 8 except for the attachment part of a reflector, and has the composition of including these members in the housing 7 made of resin with a liquid crystal panel 9, attaching them in the metal frame 10, and holding.

[0005] in addition, the polyester (PET) film which has a high reflection factor as a reflector 2 for lamp 4 -- silver (Ag) vacuum evaporation -- the bottom -- although -- it is used mostly, and since it is a transverse-plane brightness rise, two or more diffusion sheets are used, or many examples which arrange a prism sheet on a diffusion sheet are also seen.

[0006]

[Problem(s) to be Solved by the Invention] However, with such a configuration, the noise generated from the lamp turned on by the RF generator did bad influences, such as beat disturbance, to the liquid crystal panel, and there was a trouble that the abnormalities in a screen (beat disturbance) arose.

[0007] This invention solves the above-mentioned conventional trouble, and it aims at offering the liquid crystal display of the quality image quality it was made not to have a bad influence on a liquid crystal panel even if the noise occurred from the lamp.

[0008]

[Means for Solving the Problem] The light guide plate with which the liquid crystal display of this invention performed optical predetermined regular-ization by which it has been arranged on a liquid crystal panel and said liquid crystal panel, The reflective sheet stuck on said light guide plate, and the lamp arranged at the lateral portion of at least one side of said light guide plate, It is a liquid crystal display including metal covering holding a reflector, a light guide plate, etc. which wrap in said lamp, and the conductive film electrically connected to said metal covering is made to intervene between said reflectors and reflective sheets.

[0009] According to this invention, even if a noise occurs from a lamp, according to the ground impact effect of the conductive film made to intervene between a reflector and a reflective sheet, these noises do not have a bad influence on a liquid crystal panel, and the liquid crystal display of high quality is obtained.

[0010]

[Embodiment of the Invention] Hereafter, it explains, referring to a drawing about the gestalt of 1 operation of this invention. In addition, the same sign shall be used about the same part as said conventional thing. Drawing 1 is the sectional view showing the configuration of the important section in the gestalt of 1 operation of the liquid crystal display of this invention. In drawing, the dot pattern for the formation of regular [optical] is formed in the rear face of a light guide plate 5, and the reflective sheet 3 is arranged under the field. It is arranged at the front-face side of a light guide plate 5 so that the diffusion sheet 8 may cover to the edge of a light guide plate 5. The lamps 4, such as a fluorescent lamp turned on by the RF generator, have composition covered by the reflector 2, and the conductive film 1 is inserted between a reflector 2 and the reflective sheet 3, further, it connects with the metal covering 6 grounded electrically electrically and mechanically by **** etc., and this conductive film 1 is held. The above configuration member is installed in the housing 7 made of resin, and has the composition of holding the above-mentioned unit and a liquid crystal panel by the metal frame 10 which punctured the display of a liquid crystal panel 9 further.

[0011] In addition, that configuration magnitude should just also be the width of face of the range which does not influence brightness by die length almost equivalent to lamp length that what is necessary is just what has conductivity as the quality of the material of this conductive film 1. What is necessary is for there to be especially no limit also about the quality of the material of a reflector 2, and just to be able to connect electrically at least to the conductive film 1 also about the configuration of the metal covering 6, and size.

[0012] Thus, since the noise is missed by the ground with the conductive film 1 grounded electrically even if a noise occurs from the lamp turned on by the RF generator by constituting By not having a bad influence on a liquid crystal panel, and connecting the conductive film 1 to the metal covering 6 In case a liquid crystal display is attached in the body of a liquid crystal television, a personal computer, etc., that electric touch-down is performed on this body by **** etc. by that of **** with picking in this metal covering 6 at coincidence.

[0013]

[Effect of the Invention] As mentioned above, according to this invention, even if a noise occurs from the fluorescent lamp turned on by the RF generator arranged in a liquid crystal display, the advantageous effectiveness that this does not have a bad influence on a liquid crystal panel is acquired according to the ground impact effect by the conductive film.

[Translation done.]

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TECHNICAL FIELD

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PRIOR ART

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EFFECT OF THE INVENTION

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TECHNICAL PROBLEM

[Problem(s) to be Solved by the Invention] However, with such a configuration, the noise generated from the lamp turned on by the RF generator did bad influences, such as beat disturbance, to the liquid crystal panel, and there was a trouble that the abnormalities in a screen (beat disturbance) arose. [0007] This invention solves the above-mentioned conventional trouble, and it aims at offering the liquid crystal display of the quality image quality it was made not to have a bad influence on a liquid crystal panel even if the noise occurred from the lamp.

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MEANS

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DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]

[Drawing 1] The sectional view showing the configuration of the important section in the gestalt of 1 operation of the liquid crystal display of this invention

[Drawing 2] The sectional view showing the configuration of the important section in the conventional liquid crystal display

[Description of Notations]

- 1 Conductive Film
- 2 Reflector
- 3 Reflective Sheet
- 4 Lamp
- 5 Light Guide Plate
- 6 Metal Covering
- 7 Housing
- 8 Diffusion Sheet
- 9 Liquid Crystal Panel
- 10 Metal Frame

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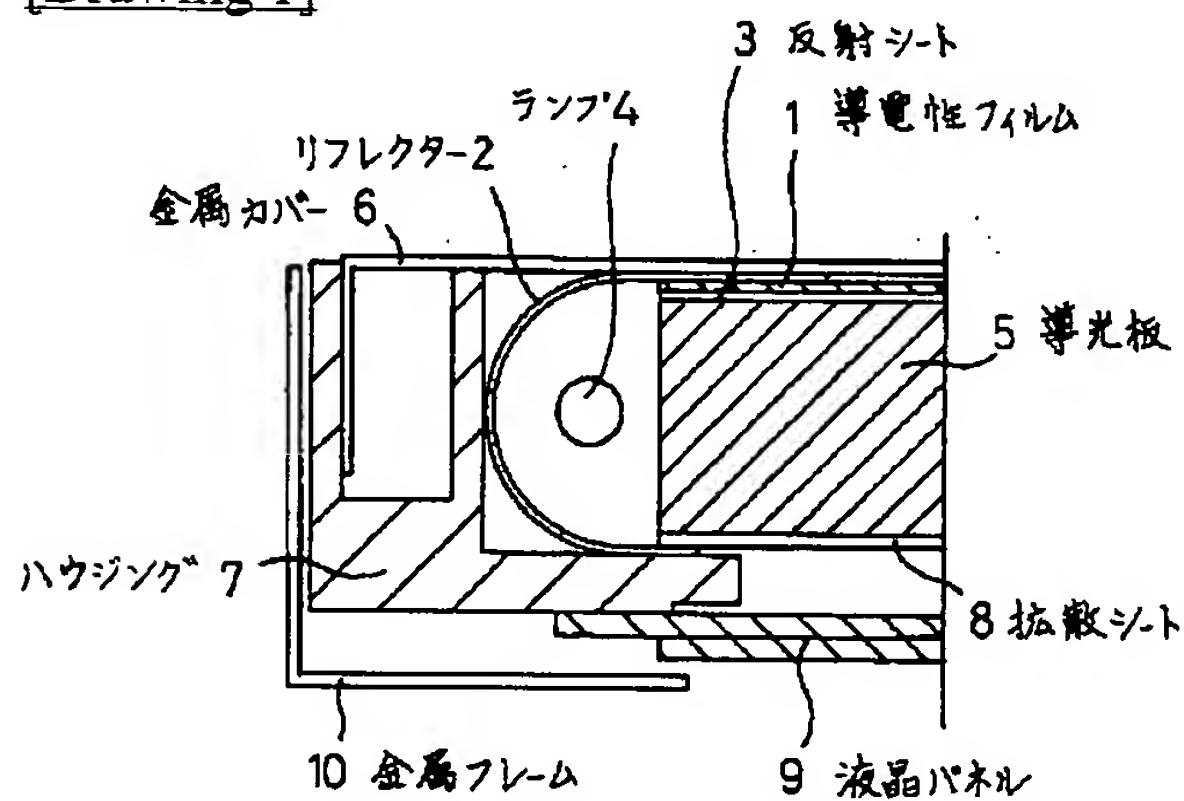
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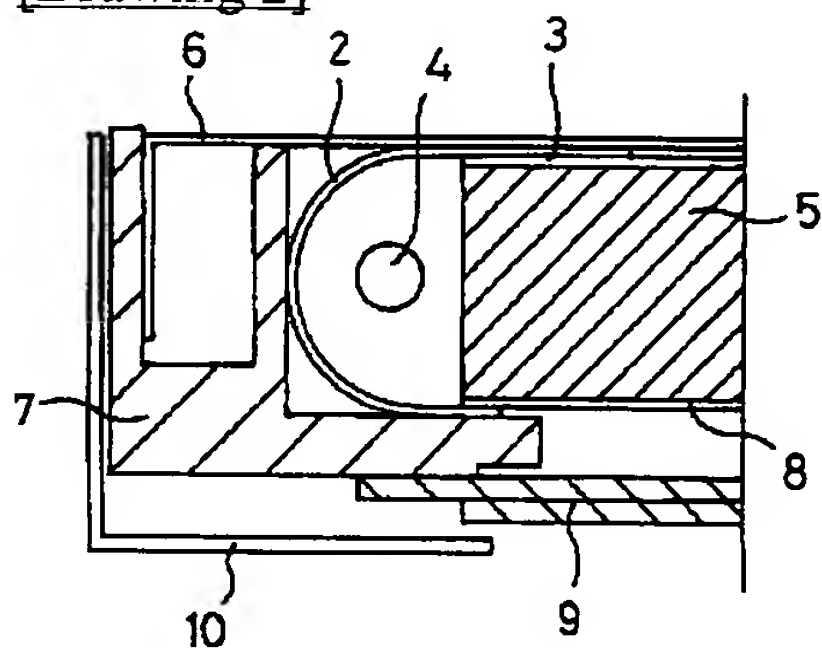
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DRAWINGS

[Drawing 1]



[Drawing 2]



[Translation done.]